SEQUENCE LISTING

<110> CHAN, Lily
CHUNG, Maxey Ching Ming
LIM, Renee Lay Hong

<120> Bacterial-derived molecules and therapeutic and diagnostic uses therefor

<130> 1781-0180P

<140> US 09/461,774
<141> 1999-12-15

<160> 22

<170> PatentIn Ver. 2.1

<210> 1
<211> 1617
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(1617)

<220>
<221> mat_peptide
<222> (1)..(1617)

<400> 1

```
agc aag ctg atc gaa tac gac gaa acc gcg cgt cgc gcc atg gag gtc   48
Ser Lys Leu Ile Glu Tyr Asp Glu Thr Ala Arg Arg Ala Met Glu Val
  1               5                  10                  15

ggc atg gac aag ctg gcc gac acc gtg cgg gtg acg ctg ggg ccg cgc   96
Gly Met Asp Lys Leu Ala Asp Thr Val Arg Val Thr Leu Gly Pro Arg
             20                  25                  30

ggc cgg cat gtg gtg ctg gcc aag gcg ttt ggc gga ccc acg gtt acc   144
Gly Arg His Val Val Leu Ala Lys Ala Phe Gly Gly Pro Thr Val Thr
         35                  40                  45

aac gac ggc gtc acg gtg gca cgt gag atc gag ctg gaa gat ccg ttt   192
Asn Asp Gly Val Thr Val Ala Arg Glu Ile Glu Leu Glu Asp Pro Phe
     50                  55                  60
```

```
gaa gac ttg ggc gcc cag ctg gtg aag tcg gtg gcc acc aag acc aac   240
Glu Asp Leu Gly Ala Gln Leu Val Lys Ser Val Ala Thr Lys Thr Asn
 65                  70                  75                  80

gat gtt gcc ggt gac ggc acc acc acc gca acc atc ttg gcg cag gca   288
Asp Val Ala Gly Asp Gly Thr Thr Thr Ala Thr Ile Leu Ala Gln Ala
                85                  90                  95

ctg atc aag ggc ggc ctg agg cta gtg gcc gcc ggc gtc aac ccg gtc   336
Leu Ile Lys Gly Gly Leu Arg Leu Val Ala Ala Gly Val Asn Pro Val
            100                 105                 110

gcg ctc ggc gtg gga atc ggc aag gcc gcc gac gcg gta ttc gag gcg   384
Ala Leu Gly Val Gly Ile Gly Lys Ala Ala Asp Ala Val Phe Glu Ala
        115                 120                 125

ctg ctg gca tcg gcc acg ccg gtg tcc ggc aag acc ggc atc gcg cag   432
Leu Leu Ala Ser Ala Thr Pro Val Ser Gly Lys Thr Gly Ile Ala Gln
    130                 135                 140

gtg gcg acg gtg tcc tcg cgc gac gag cag atc ggt gac ctg gtt ggc   480
Val Ala Thr Val Ser Ser Arg Asp Glu Gln Ile Gly Asp Leu Val Gly
145                 150                 155                 160

gaa gcg atg aac aag gtc ggc cac gac agc gtg gtc agc gtc aag gaa   528
Glu Ala Met Asn Lys Val Gly His Asp Ser Val Val Ser Val Lys Glu
                165                 170                 175

tcc tcc acg ctg ggc acc gag ttg gag ttc acc gaa ggt att ggc ttc   576
Ser Ser Thr Leu Gly Thr Glu Leu Glu Phe Thr Glu Gly Ile Gly Phe
            180                 185                 190

cac aaa ggc ttc ttg tcg gca tac ttc gtt acc gac ttc gat aac cag   624
His Lys Gly Phe Leu Ser Ala Tyr Phe Val Thr Asp Phe Asp Asn Gln
        195                 200                 205

cag gcg gtg ctc gag gac gcg ttg atc ctg cta cac caa gac aag atc   672
Gln Ala Val Leu Glu Asp Ala Leu Ile Leu Leu His Gln Asp Lys Ile
    210                 215                 220

agc tcg ctt ccc gat ctg ttg cca ttg ctg gaa aag gtt gca gga acg   720
Ser Ser Leu Pro Asp Leu Leu Pro Leu Leu Glu Lys Val Ala Gly Thr
225                 230                 235                 240

ggt aag cca cta ctg atc gtg gct gaa gac gtg gag ggc gaa gcg ttg   768
Gly Lys Pro Leu Leu Ile Val Ala Glu Asp Val Glu Gly Glu Ala Leu
                245                 250                 255
```

```
gcg acg ctg gtc gtc aac gcg att cgc aag acg ttg aaa gcg gtc gcg   816
Ala Thr Leu Val Val Asn Ala Ile Arg Lys Thr Leu Lys Ala Val Ala
            260                 265                 270

gtc aag ggg ccg tac ttc ggt gac cgc cgt aag gcg ttc ctt gag gac   864
Val Lys Gly Pro Tyr Phe Gly Asp Arg Arg Lys Ala Phe Leu Glu Asp
        275                 280                 285

ctg gcg gtg gtg acg ggt ggc cac gtg gtc aac ccc gac gcc ggc att   912
Leu Ala Val Val Thr Gly Gly His Val Val Asn Pro Asp Ala Gly Ile
    290                 295                 300

gtg ctg cgc gag gtg ggc ttg gag gtg ctg ggc tcg gcc cga cgc gtg   960
Val Leu Arg Glu Val Gly Leu Glu Val Leu Gly Ser Ala Arg Arg Val
305                 310                 315                 320

gtg gtc agc aag gac gac acg gtc att gtc gac ggc ggc ggc acc gca  1008
Val Val Ser Lys Asp Asp Thr Val Ile Val Asp Gly Gly Gly Thr Ala
                325                 330                 335

gaa gcg gtg gcc aac cgg gcg aac cac ttg cgt gcc gag atc gac aag  1056
Glu Ala Val Ala Asn Arg Ala Asn His Leu Arg Ala Glu Ile Asp Lys
            340                 345                 350

agc gat tcg gat tgg gat cgg gaa aag ctt ggc gag cgg ctg gcc aaa  1104
Ser Asp Ser Asp Trp Asp Arg Glu Lys Leu Gly Glu Arg Leu Ala Lys
        355                 360                 365

ctg gcc ggc ggg gtt gct gtc atc aag gtg ggt gcc gcc acc gac acc  1152
Leu Ala Gly Gly Val Ala Val Ile Lys Val Gly Ala Ala Thr Asp Thr
    370                 375                 380

gca ctc aag gag cgc aag gaa agc gtc gag gat gcg gtc gcg gcc gcc  1200
Ala Leu Lys Glu Arg Lys Glu Ser Val Glu Asp Ala Val Ala Ala Ala
385                 390                 395                 400

aag gcc gcg gtc gag gag ggc atc gtc cct ggt ggg gga gcc tcg ctc  1248
Lys Ala Ala Val Glu Glu Gly Ile Val Pro Gly Gly Gly Ala Ser Leu
                405                 410                 415

atc cac cag gcc cgc aag gcg ctg acc gaa ctg cgt gcg tcg ctg acc  1296
Ile His Gln Ala Arg Lys Ala Leu Thr Glu Leu Arg Ala Ser Leu Thr
            420                 425                 430

ggt gac gag gtc ctc ggt gtc gac gtg ttc tcc gaa gcc ctt gcc gcg  1344
Gly Asp Glu Val Leu Gly Val Asp Val Phe Ser Glu Ala Leu Ala Ala
        435                 440                 445
```

```
ccg ttg ttc tgg atc gcc gcc aac gct ggc ttg gac ggc tcg gtg gtg   1392
Pro Leu Phe Trp Ile Ala Ala Asn Ala Gly Leu Asp Gly Ser Val Val
    450                 455                 460

gtc aac aag gtc agc gag cta ccc gcc ggg cat ggg ctg aac gtg aac   1440
Val Asn Lys Val Ser Glu Leu Pro Ala Gly His Gly Leu Asn Val Asn
465                 470                 475                 480

acc ctg agc tat ggt gac ttg gcc gct gac ggc gtc atc gac ccg gtc   1488
Thr Leu Ser Tyr Gly Asp Leu Ala Ala Asp Gly Val Ile Asp Pro Val
                485                 490                 495

aag gtg act agg tcg gcg gtg ttg aac gcg tca tcg gtt gcc cgg atg   1536
Lys Val Thr Arg Ser Ala Val Leu Asn Ala Ser Ser Val Ala Arg Met
            500                 505                 510

gta ctc acc acc gag acg gtc gtg gtc gac aag ccg gcc aag gca gaa   1584
Val Leu Thr Thr Glu Thr Val Val Val Asp Lys Pro Ala Lys Ala Glu
        515                 520                 525

gat cac gac cat cac cac ggg cac gcg cac tga                       1617
Asp His Asp His His His Gly His Ala His
    530                 535
```

<210> 2
<211> 538
<212> PRT
<213> Mycobacterium tuberculosis

<400> 2

```
Ser Lys Leu Ile Glu Tyr Asp Glu Thr Ala Arg Arg Ala Met Glu Val
  1               5                  10                  15
Gly Met Asp Lys Leu Ala Asp Thr Val Arg Val Thr Leu Gly Pro Arg
             20                  25                  30
Gly Arg His Val Val Leu Ala Lys Ala Phe Gly Gly Pro Thr Val Thr
         35                  40                  45
Asn Asp Gly Val Thr Val Ala Arg Glu Ile Glu Leu Glu Asp Pro Phe
     50                  55                  60
Glu Asp Leu Gly Ala Gln Leu Val Lys Ser Val Ala Thr Lys Thr Asn
 65                  70                  75                  80
Asp Val Ala Gly Asp Gly Thr Thr Thr Ala Thr Ile Leu Ala Gln Ala
                 85                  90                  95
Leu Ile Lys Gly Gly Leu Arg Leu Val Ala Ala Gly Val Asn Pro Val
            100                 105                 110
Ala Leu Gly Val Gly Ile Gly Lys Ala Ala Asp Ala Val Phe Glu Ala
        115                 120                 125
Leu Leu Ala Ser Ala Thr Pro Val Ser Gly Lys Thr Gly Ile Ala Gln
```

```
    130                 135                 140
Val Ala Thr Val Ser Ser Arg Asp Glu Gln Ile Gly Asp Leu Val Gly
145                 150                 155                 160
Glu Ala Met Asn Lys Val Gly His Asp Ser Val Val Ser Val Lys Glu
                165                 170                 175
Ser Ser Thr Leu Gly Thr Glu Leu Glu Phe Thr Glu Gly Ile Gly Phe
            180                 185                 190
His Lys Gly Phe Leu Ser Ala Tyr Phe Val Thr Asp Phe Asp Asn Gln
        195                 200                 205
Gln Ala Val Leu Glu Asp Ala Leu Ile Leu Leu His Gln Asp Lys Ile
    210                 215                 220
Ser Ser Leu Pro Asp Leu Leu Pro Leu Leu Glu Lys Val Ala Gly Thr
225                 230                 235                 240
Gly Lys Pro Leu Leu Ile Val Ala Glu Asp Val Glu Gly Glu Ala Leu
                245                 250                 255
Ala Thr Leu Val Val Asn Ala Ile Arg Lys Thr Leu Lys Ala Val Ala
            260                 265                 270
Val Lys Gly Pro Tyr Phe Gly Asp Arg Arg Lys Ala Phe Leu Glu Asp
        275                 280                 285
Leu Ala Val Val Thr Gly Gly His Val Val Asn Pro Asp Ala Gly Ile
    290                 295                 300
Val Leu Arg Glu Val Gly Leu Glu Val Leu Gly Ser Ala Arg Arg Val
305                 310                 315                 320
Val Val Ser Lys Asp Asp Thr Val Ile Val Asp Gly Gly Gly Thr Ala
                325                 330                 335
Glu Ala Val Ala Asn Arg Ala Asn His Leu Arg Ala Glu Ile Asp Lys
            340                 345                 350
Ser Asp Ser Asp Trp Asp Arg Glu Lys Leu Gly Glu Arg Leu Ala Lys
        355                 360                 365
Leu Ala Gly Gly Val Ala Val Ile Lys Val Gly Ala Ala Thr Asp Thr
    370                 375                 380
Ala Leu Lys Glu Arg Lys Glu Ser Val Glu Asp Ala Val Ala Ala Ala
385                 390                 395                 400
Lys Ala Ala Val Glu Glu Gly Ile Val Pro Gly Gly Gly Ala Ser Leu
                405                 410                 415
Ile His Gln Ala Arg Lys Ala Leu Thr Glu Leu Arg Ala Ser Leu Thr
            420                 425                 430
Gly Asp Glu Val Leu Gly Val Asp Val Phe Ser Glu Ala Leu Ala Ala
        435                 440                 445
Pro Leu Phe Trp Ile Ala Ala Asn Ala Gly Leu Asp Gly Ser Val Val
    450                 455                 460
Val Asn Lys Val Ser Glu Leu Pro Ala Gly His Gly Leu Asn Val Asn
465                 470                 475                 480
Thr Leu Ser Tyr Gly Asp Leu Ala Ala Asp Gly Val Ile Asp Pro Val
                485                 490                 495
Lys Val Thr Arg Ser Ala Val Leu Asn Ala Ser Ser Val Ala Arg Met
            500                 505                 510
Val Leu Thr Thr Glu Thr Val Val Val Asp Lys Pro Ala Lys Ala Glu
```

```
        515                 520                 525
Asp His Asp His His His Gly His Ala His
    530                 535
```

<210> 3
<211> 1560
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(1560)

<220>
<221> mat_peptide
<222> (1)..(1560)

<400> 3

```
gcg gcc atg tgg cgc cgc aga ccg ttg agc tcg gcg ctg ctg tcc ttc   48
Ala Ala Met Trp Arg Arg Arg Pro Leu Ser Ser Ala Leu Leu Ser Phe
  1               5                  10                  15

ggg ttg ctg ctc ggc gga ctg ctc cta gca gcg ccc ccg ttg gcc ggc   96
Gly Leu Leu Leu Gly Gly Leu Leu Leu Ala Ala Pro Pro Leu Ala Gly
             20                  25                  30

gcg act gaa gaa ccc ggc gcc ggc caa acc ccg ggt gcg ccg gtc gtg   144
Ala Thr Glu Glu Pro Gly Ala Gly Gln Thr Pro Gly Ala Pro Val Val
         35                  40                  45

gcg ccg caa cag agt tgg aac agc tgc cgc gag ttc atc gcc gac acc   192
Ala Pro Gln Gln Ser Trp Asn Ser Cys Arg Glu Phe Ile Ala Asp Thr
     50                  55                  60

agc gaa att cgc act gca cgc tgc gcg acg gtg tcc gtc ccc gtc gac   240
Ser Glu Ile Arg Thr Ala Arg Cys Ala Thr Val Ser Val Pro Val Asp
 65                  70                  75                  80

tac gac caa ccc ggt ggg aca caa gcg aag ttg gcg gtg atc cgc gtc   288
Tyr Asp Gln Pro Gly Gly Thr Gln Ala Lys Leu Ala Val Ile Arg Val
                 85                  90                  95

ccc gcg acg gga cag cga ttc gga gca ctg ctg gtc aat cct ggg gga   336
Pro Ala Thr Gly Gln Arg Phe Gly Ala Leu Leu Val Asn Pro Gly Gly
            100                 105                 110
```

```
ccc ggg gcg tcg gcg gtc gac atg gtc gcc gct atg gca ccc gcg atc   384
Pro Gly Ala Ser Ala Val Asp Met Val Ala Ala Met Ala Pro Ala Ile
        115                 120                 125

gcc gac acc gac att ctc cgc cac ttc gac ctg gtg ggc ttc gac ccg   432
Ala Asp Thr Asp Ile Leu Arg His Phe Asp Leu Val Gly Phe Asp Pro
    130                 135                 140

aga ggg gtc ggc cac tcg acc cct gcg ttg cgg tgt cgc acc gac gcc   480
Arg Gly Val Gly His Ser Thr Pro Ala Leu Arg Cys Arg Thr Asp Ala
145                 150                 155                 160

gag ttc gac gcg tac cgg cgc gat ccg atg gcc gac tac agt ccg gcc   528
Glu Phe Asp Ala Tyr Arg Arg Asp Pro Met Ala Asp Tyr Ser Pro Ala
                165                 170                 175

ggc gtc acc cac gtc gaa cag gtc tac cgg cag ttg gcc cag gac tgt   576
Gly Val Thr His Val Glu Gln Val Tyr Arg Gln Leu Ala Gln Asp Cys
            180                 185                 190

gtt gac cgg atg ggc ttc agc ttc ttg gcc aat atc ggt acc gcg tcc   624
Val Asp Arg Met Gly Phe Ser Phe Leu Ala Asn Ile Gly Thr Ala Ser
        195                 200                 205

gtc gca cgg gac atg gac atg gtt cgc caa gcg tta ggt gac gat cag   672
Val Ala Arg Asp Met Asp Met Val Arg Gln Ala Leu Gly Asp Asp Gln
    210                 215                 220

atc aac tac ctc gga tac agc tac ggc acc aag ttg ggc acc gct tac   720
Ile Asn Tyr Leu Gly Tyr Ser Tyr Gly Thr Lys Leu Gly Thr Ala Tyr
225                 230                 235                 240

ctg gaa cgg ttc ggt act cat gtg cgg gcg atg gtc ctc gac ggc gct   768
Leu Glu Arg Phe Gly Thr His Val Arg Ala Met Val Leu Asp Gly Ala
                245                 250                 255

atc gat cca gcc gtt agc cca atc gag gaa agc atc agc caa atg gcg   816
Ile Asp Pro Ala Val Ser Pro Ile Glu Glu Ser Ile Ser Gln Met Ala
            260                 265                 270

gga ttt cag acc gct ttc aat gac tac gcc gcc gac tgc gcc cgc tcg   864
Gly Phe Gln Thr Ala Phe Asn Asp Tyr Ala Ala Asp Cys Ala Arg Ser
        275                 280                 285

ccg gcc tgc cct ctg ggc acc gac tcg gcc cag tgg gtc aac cgc tac   912
Pro Ala Cys Pro Leu Gly Thr Asp Ser Ala Gln Trp Val Asn Arg Tyr
    290                 295                 300
```

```
cac gcc ctg gtt gac ccg ctg gtg cag aag ccg ggt aag acg tcg gat   960
His Ala Leu Val Asp Pro Leu Val Gln Lys Pro Gly Lys Thr Ser Asp
305                 310                 315                 320

cca cgt ggc ctg agc tac gcc gac gcg acg acg ggc acc atc aac gcg   1008
Pro Arg Gly Leu Ser Tyr Ala Asp Ala Thr Thr Gly Thr Ile Asn Ala
                325                 330                 335

ctg tac agc cct cag cgc tgg aag tac ctg acc agt ggt ctg ctg ggg   1056
Leu Tyr Ser Pro Gln Arg Trp Lys Tyr Leu Thr Ser Gly Leu Leu Gly
            340                 345                 350

ctg cag cgc ggc agc gac gcc ggc gac ttg ctg gtg ctt gcc gac gac   1104
Leu Gln Arg Gly Ser Asp Ala Gly Asp Leu Leu Val Leu Ala Asp Asp
        355                 360                 365

tat gac ggc cgg gat gca gac ggg cac tac agc aac gac cag gac gcg   1152
Tyr Asp Gly Arg Asp Ala Asp Gly His Tyr Ser Asn Asp Gln Asp Ala
    370                 375                 380

ttc aac gcg gtc cgg tgc gtc tat gcg ccc aca ccg gcc gat cca gcg   1200
Phe Asn Ala Val Arg Cys Val Tyr Ala Pro Thr Pro Ala Asp Pro Ala
385                 390                 395                 400

gcc tgg gtg gcc gcc gac caa cgg atc cgt cag gtc gcc ccg ttc ctt   1248
Ala Trp Val Ala Ala Asp Gln Arg Ile Arg Gln Val Ala Pro Phe Leu
                405                 410                 415

agc tac ggg cag ttc acc gga tcc gcc ccc cgc gat ctg tgc gcg ctg   1296
Ser Tyr Gly Gln Phe Thr Gly Ser Ala Pro Arg Asp Leu Cys Ala Leu
            420                 425                 430

tgg ccg gtg ccg gca acg tcg acg ccg cac ccc gcg gcg ccg gcc ggg   1344
Trp Pro Val Pro Ala Thr Ser Thr Pro His Pro Ala Ala Pro Ala Gly
        435                 440                 445

gct ggc aag gtc gtc gtg gtg tcc acc acc cac gac ccg gcc act ccg   1392
Ala Gly Lys Val Val Val Val Ser Thr Thr His Asp Pro Ala Thr Pro
    450                 455                 460

tat cag tcc ggg gta gac ctg gcc cgc cag ctg ggc gca ccg ctg atc   1440
Tyr Gln Ser Gly Val Asp Leu Ala Arg Gln Leu Gly Ala Pro Leu Ile
465                 470                 475                 480

acc ttc gac ggc acc caa cac act gcg gtg ttc gat ggc aac cag tgt   1488
Thr Phe Asp Gly Thr Gln His Thr Ala Val Phe Asp Gly Asn Gln Cys
                485                 490                 495
```

```
gtg gac tct gcg gtg atg cac tat ttt ctc gac ggg acc ttg ccg ccg   1536
Val Asp Ser Ala Val Met His Tyr Phe Leu Asp Gly Thr Leu Pro Pro
            500                 505                 510

acg agt ctg cgg tgc gcg ccc tga                                  1560
Thr Ser Leu Arg Cys Ala Pro
        515                 520
```

<210> 4
<211> 519
<212> PRT
<213> Mycobacterium tuberculosis

<400> 4

```
Ala Ala Met Trp Arg Arg Arg Pro Leu Ser Ser Ala Leu Leu Ser Phe
  1               5                  10                  15
Gly Leu Leu Leu Gly Gly Leu Leu Leu Ala Ala Pro Pro Leu Ala Gly
             20                  25                  30
Ala Thr Glu Glu Pro Gly Ala Gly Gln Thr Pro Gly Ala Pro Val Val
         35                  40                  45
Ala Pro Gln Gln Ser Trp Asn Ser Cys Arg Glu Phe Ile Ala Asp Thr
     50                  55                  60
Ser Glu Ile Arg Thr Ala Arg Cys Ala Thr Val Ser Val Pro Val Asp
 65                  70                  75                  80
Tyr Asp Gln Pro Gly Gly Thr Gln Ala Lys Leu Ala Val Ile Arg Val
                 85                  90                  95
Pro Ala Thr Gly Gln Arg Phe Gly Ala Leu Leu Val Asn Pro Gly Gly
            100                 105                 110
Pro Gly Ala Ser Ala Val Asp Met Val Ala Ala Met Ala Pro Ala Ile
        115                 120                 125
Ala Asp Thr Asp Ile Leu Arg His Phe Asp Leu Val Gly Phe Asp Pro
    130                 135                 140
Arg Gly Val Gly His Ser Thr Pro Ala Leu Arg Cys Arg Thr Asp Ala
145                 150                 155                 160
Glu Phe Asp Ala Tyr Arg Arg Asp Pro Met Ala Asp Tyr Ser Pro Ala
                165                 170                 175
Gly Val Thr His Val Glu Gln Val Tyr Arg Gln Leu Ala Gln Asp Cys
            180                 185                 190
Val Asp Arg Met Gly Phe Ser Phe Leu Ala Asn Ile Gly Thr Ala Ser
        195                 200                 205
Val Ala Arg Asp Met Asp Met Val Arg Gln Ala Leu Gly Asp Asp Gln
    210                 215                 220
Ile Asn Tyr Leu Gly Tyr Ser Tyr Gly Thr Lys Leu Gly Thr Ala Tyr
225                 230                 235                 240
Leu Glu Arg Phe Gly Thr His Val Arg Ala Met Val Leu Asp Gly Ala
                245                 250                 255
Ile Asp Pro Ala Val Ser Pro Ile Glu Glu Ser Ile Ser Gln Met Ala
```

```
            260                 265                 270
Gly Phe Gln Thr Ala Phe Asn Asp Tyr Ala Ala Asp Cys Ala Arg Ser
        275                 280                 285
Pro Ala Cys Pro Leu Gly Thr Asp Ser Ala Gln Trp Val Asn Arg Tyr
    290                 295                 300
His Ala Leu Val Asp Pro Leu Val Gln Lys Pro Gly Lys Thr Ser Asp
305                 310                 315                 320
Pro Arg Gly Leu Ser Tyr Ala Asp Ala Thr Thr Gly Thr Ile Asn Ala
                325                 330                 335
Leu Tyr Ser Pro Gln Arg Trp Lys Tyr Leu Thr Ser Gly Leu Leu Gly
            340                 345                 350
Leu Gln Arg Gly Ser Asp Ala Gly Asp Leu Leu Val Leu Ala Asp Asp
        355                 360                 365
Tyr Asp Gly Arg Asp Ala Asp Gly His Tyr Ser Asn Asp Gln Asp Ala
    370                 375                 380
Phe Asn Ala Val Arg Cys Val Tyr Ala Pro Thr Pro Ala Asp Pro Ala
385                 390                 395                 400
Ala Trp Val Ala Ala Asp Gln Arg Ile Arg Gln Val Ala Pro Phe Leu
                405                 410                 415
Ser Tyr Gly Gln Phe Thr Gly Ser Ala Pro Arg Asp Leu Cys Ala Leu
            420                 425                 430
Trp Pro Val Pro Ala Thr Ser Thr Pro His Pro Ala Ala Pro Ala Gly
        435                 440                 445
Ala Gly Lys Val Val Val Val Ser Thr Thr His Asp Pro Ala Thr Pro
    450                 455                 460
Tyr Gln Ser Gly Val Asp Leu Ala Arg Gln Leu Gly Ala Pro Leu Ile
465                 470                 475                 480
Thr Phe Asp Gly Thr Gln His Thr Ala Val Phe Asp Gly Asn Gln Cys
                485                 490                 495
Val Asp Ser Ala Val Met His Tyr Phe Leu Asp Gly Thr Leu Pro Pro
            500                 505                 510
Thr Ser Leu Arg Cys Ala Pro
        515
```

<210> 5
<211> 903
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(903)

<220>
<221> mat_peptide
<222> (1)..(903)

<400> 5

```
gat tac gaa cag gac tgg gac ggc gtt gcg ata acc ctg acg cgg tcg   48
Asp Tyr Glu Gln Asp Trp Asp Gly Val Ala Ile Thr Leu Thr Arg Ser
  1               5                  10                  15

cag ctg tat cgg cga acg ctg aat gtg gca cag gag ctg agc cgt tgt   96
Gln Leu Tyr Arg Arg Thr Leu Asn Val Ala Gln Glu Leu Ser Arg Cys
             20                  25                  30

ggt tcc acg ggt gac cgc gtg gtg atc tct gct ccg cag gga ctc gag   144
Gly Ser Thr Gly Asp Arg Val Val Ile Ser Ala Pro Gln Gly Leu Glu
         35                  40                  45

tac gtc gtc gcc tat ctc ggc gcg ttg cag gcc ggg cgc atc gcc gtg   192
Tyr Val Val Ala Tyr Leu Gly Ala Leu Gln Ala Gly Arg Ile Ala Val
     50                  55                  60

ccg ctt tcg gtt cca caa ggc ggc gtt acc gat gaa cgt tcc gat tcg   240
Pro Leu Ser Val Pro Gln Gly Gly Val Thr Asp Glu Arg Ser Asp Ser
 65                  70                  75                  80

gta ctg agt gat tcg tcg ccg gtg gcc att ctc act aca tcg tct gcc   288
Val Leu Ser Asp Ser Ser Pro Val Ala Ile Leu Thr Thr Ser Ser Ala
                 85                  90                  95

gtg gac gac gtc gtg caa cat gtt gcg cgg cgg ccc ggg gaa tcc ccg   336
Val Asp Asp Val Val Gln His Val Ala Arg Arg Pro Gly Glu Ser Pro
            100                 105                 110

cca tca att atc gaa gtt gat ttg ctc gat ctg gac gct ccg aat ggg   384
Pro Ser Ile Ile Glu Val Asp Leu Leu Asp Leu Asp Ala Pro Asn Gly
        115                 120                 125

tat acc ttc aaa gaa gac gag tat cca tct acc gcg tat ttg caa tac   432
Tyr Thr Phe Lys Glu Asp Glu Tyr Pro Ser Thr Ala Tyr Leu Gln Tyr
    130                 135                 140

acc tcc ggg tcc acc cgc acg ccc gct ggc gtg gtg atg tcc cat cag   480
Thr Ser Gly Ser Thr Arg Thr Pro Ala Gly Val Val Met Ser His Gln
145                 150                 155                 160

aac gtt cgg gtt aat ttc gaa cag ctg atg tct ggc tac ttt gcg gat   528
Asn Val Arg Val Asn Phe Glu Gln Leu Met Ser Gly Tyr Phe Ala Asp
                165                 170                 175

acc gac ggg att cca ccg cca aat tcc gca ctc gta tcc tgg cta ccc   576
Thr Asp Gly Ile Pro Pro Pro Asn Ser Ala Leu Val Ser Trp Leu Pro
```

```
            180                 185                 190

ttc tac cac gac atg ggt ttg gta ata gga att tgc gca cca att ctg   624
Phe Tyr His Asp Met Gly Leu Val Ile Gly Ile Cys Ala Pro Ile Leu
        195                 200                 205

ggt gga tac ccc gcg gtg ctc acc agc ccg gtg tcg ttc ctg cag cgc   672
Gly Gly Tyr Pro Ala Val Leu Thr Ser Pro Val Ser Phe Leu Gln Arg
    210                 215                 220

ccg gcc cgg tgg atg cac ttg atg gcc agc gat ttt cac gcc ttt tcg   720
Pro Ala Arg Trp Met His Leu Met Ala Ser Asp Phe His Ala Phe Ser
225                 230                 235                 240

gca gca ccg aat ttc gcc ttt gaa cta gcg gca cga aga aca acc gac   768
Ala Ala Pro Asn Phe Ala Phe Glu Leu Ala Ala Arg Arg Thr Thr Asp
                245                 250                 255

gac gac atg gcc ggg cgt gac ctc ggc aac ata ctg acc atc ctc agc   816
Asp Asp Met Ala Gly Arg Asp Leu Gly Asn Ile Leu Thr Ile Leu Ser
            260                 265                 270

ggt agc gag cgg gta cag gcc gcg acg atc aag cgc ttc gcc gac cgc   864
Gly Ser Glu Arg Val Gln Ala Ala Thr Ile Lys Arg Phe Ala Asp Arg
        275                 280                 285

ttt gct cgc ttc aat ctg cag gag agg gtg aaa gct taa               903
Phe Ala Arg Phe Asn Leu Gln Glu Arg Val Lys Ala
    290                 295                 300
```

<210> 6
<211> 300
<212> PRT
<213> Mycobacterium tuberculosis

<400> 6

```
Asp Tyr Glu Gln Asp Trp Asp Gly Val Ala Ile Thr Leu Thr Arg Ser
  1               5                  10                  15
Gln Leu Tyr Arg Arg Thr Leu Asn Val Ala Gln Glu Leu Ser Arg Cys
             20                  25                  30
Gly Ser Thr Gly Asp Arg Val Val Ile Ser Ala Pro Gln Gly Leu Glu
         35                  40                  45
Tyr Val Val Ala Tyr Leu Gly Ala Leu Gln Ala Gly Arg Ile Ala Val
     50                  55                  60
Pro Leu Ser Val Pro Gln Gly Gly Val Thr Asp Glu Arg Ser Asp Ser
 65                  70                  75                  80
Val Leu Ser Asp Ser Ser Pro Val Ala Ile Leu Thr Thr Ser Ser Ala
```

```
                85                  90                  95
Val Asp Asp Val Val Gln His Val Ala Arg Arg Pro Gly Glu Ser Pro
            100                 105                 110
Pro Ser Ile Ile Glu Val Asp Leu Leu Asp Leu Asp Ala Pro Asn Gly
        115                 120                 125
Tyr Thr Phe Lys Glu Asp Glu Tyr Pro Ser Thr Ala Tyr Leu Gln Tyr
    130                 135                 140
Thr Ser Gly Ser Thr Arg Thr Pro Ala Gly Val Val Met Ser His Gln
145                 150                 155                 160
Asn Val Arg Val Asn Phe Glu Gln Leu Met Ser Gly Tyr Phe Ala Asp
                165                 170                 175
Thr Asp Gly Ile Pro Pro Pro Asn Ser Ala Leu Val Ser Trp Leu Pro
            180                 185                 190
Phe Tyr His Asp Met Gly Leu Val Ile Gly Ile Cys Ala Pro Ile Leu
        195                 200                 205
Gly Gly Tyr Pro Ala Val Leu Thr Ser Pro Val Ser Phe Leu Gln Arg
    210                 215                 220
Pro Ala Arg Trp Met His Leu Met Ala Ser Asp Phe His Ala Phe Ser
225                 230                 235                 240
Ala Ala Pro Asn Phe Ala Phe Glu Leu Ala Ala Arg Arg Thr Thr Asp
                245                 250                 255
Asp Asp Met Ala Gly Arg Asp Leu Gly Asn Ile Leu Thr Ile Leu Ser
            260                 265                 270
Gly Ser Glu Arg Val Gln Ala Ala Thr Ile Lys Arg Phe Ala Asp Arg
        275                 280                 285
Phe Ala Arg Phe Asn Leu Gln Glu Arg Val Lys Ala
    290                 295                 300
```

<210> 7
<211> 432
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(432)

<220>
<221> mat_peptide
<222> (1)..(432)

<400> 7

```
gcc acc acc ctt ccc gtt cag cgc cac ccg cgg tcc ctc ttc ccc gag   48
Ala Thr Thr Leu Pro Val Gln Arg His Pro Arg Ser Leu Phe Pro Glu
  1               5                  10                  15
```

```
ttt tct gag ctg ttc gcg gcc ttc ccg tca ttc gcc gga ctc cgg ccc   96
Phe Ser Glu Leu Phe Ala Ala Phe Pro Ser Phe Ala Gly Leu Arg Pro
             20                  25                  30

acc ttc gac acc cgg ttg atg cgg ctg gaa gac gag atg aaa gag ggg   144
Thr Phe Asp Thr Arg Leu Met Arg Leu Glu Asp Glu Met Lys Glu Gly
         35                  40                  45

cgc tac gag gta cgc gcg gag ctt ccc ggg gtc gac ccc gac aag gac   192
Arg Tyr Glu Val Arg Ala Glu Leu Pro Gly Val Asp Pro Asp Lys Asp
     50                  55                  60

gtc cac att atg gtc cgc gat ggt cag ctg acc atc aag gcc gag cgc   240
Val His Ile Met Val Arg Asp Gly Gln Leu Thr Ile Lys Ala Glu Arg
 65                  70                  75                  80

acc gag cag aag gac tta gac ggt cgc tcg gaa ttc gcg tac ggt tcc   288
Thr Glu Gln Lys Asp Leu Asp Gly Arg Ser Glu Phe Ala Tyr Gly Ser
                 85                  90                  95

ttc gtt cgc acg gtg tcg ctg ccg gta ggt gct gac gag gac gac att   336
Phe Val Arg Thr Val Ser Leu Pro Val Gly Ala Asp Glu Asp Asp Ile
            100                 105                 110

aag gcc acc tac gac aag ggc att ctt act gtg tcg gtg gcg gtt tcg   384
Lys Ala Thr Tyr Asp Lys Gly Ile Leu Thr Val Ser Val Ala Val Ser
        115                 120                 125

gaa ggg aag cca acc gaa aag cac att cag atc cgg tcc acc aac tga   432
Glu Gly Lys Pro Thr Glu Lys His Ile Gln Ile Arg Ser Thr Asn
    130                 135                 140
```

<210> 8
<211> 143
<212> PRT
<213> Mycobacterium tuberculosis

<400> 8

```
Ala Thr Thr Leu Pro Val Gln Arg His Pro Arg Ser Leu Phe Pro Glu
  1               5                  10                  15
Phe Ser Glu Leu Phe Ala Ala Phe Pro Ser Phe Ala Gly Leu Arg Pro
             20                  25                  30
Thr Phe Asp Thr Arg Leu Met Arg Leu Glu Asp Glu Met Lys Glu Gly
         35                  40                  45
Arg Tyr Glu Val Arg Ala Glu Leu Pro Gly Val Asp Pro Asp Lys Asp
     50                  55                  60
Val His Ile Met Val Arg Asp Gly Gln Leu Thr Ile Lys Ala Glu Arg
```

```
 65                  70                  75                  80
Thr Glu Gln Lys Asp Leu Asp Gly Arg Ser Glu Phe Ala Tyr Gly Ser
                85                  90                  95
Phe Val Arg Thr Val Ser Leu Pro Val Gly Ala Asp Glu Asp Asp Ile
            100                 105                 110
Lys Ala Thr Tyr Asp Lys Gly Ile Leu Thr Val Ser Val Ala Val Ser
        115                 120                 125
Glu Gly Lys Pro Thr Glu Lys His Ile Gln Ile Arg Ser Thr Asn
    130                 135                 140
```

<210> 9
<211> 1161
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(1161)

<220>
<221> mat_peptide
<222> (1)..(1161)

<400> 9

```
aat tcg atg cca gtc ccg ccg gcg cca cca gcg ccg ccg tca ccg atc   48
Asn Ser Met Pro Val Pro Pro Ala Pro Pro Ala Pro Pro Ser Pro Ile
  1               5                  10                  15

aac ccg ccg gtg ccg ccg gtg ccg ccg cta ccg gcc gcg ccc cgg acg   96
Asn Pro Pro Val Pro Pro Val Pro Pro Leu Pro Ala Ala Pro Arg Thr
             20                  25                  30

ctg tcg ccg ccg gta ccg ccg gcg ccg ccg tcg ccg atc agc ttg gcg  144
Leu Ser Pro Pro Val Pro Pro Ala Pro Pro Ser Pro Ile Ser Leu Ala
         35                  40                  45

gcc ccg ccg ctg cca ccg gac ccg ccg atg ccg ccg gcc att tgg tcc  192
Ala Pro Pro Leu Pro Pro Asp Pro Pro Met Pro Pro Ala Ile Trp Ser
     50                  55                  60

gca ctg gag gcg ccg aac cct ccg gtg ccc ccg gcg ccg ccg gga ccg  240
Ala Leu Glu Ala Pro Asn Pro Pro Val Pro Pro Ala Pro Pro Gly Pro
 65                  70                  75                  80

aac agt gcg ccg gca ccg ccg atg ccg ccg acg cct cct ttg ccg ccg  288
Asn Ser Ala Pro Ala Pro Pro Met Pro Pro Thr Pro Pro Leu Pro Pro
```

```
                85                  90                  95

gtg ccg ccg ggg tcg ggc gcg ccg aga ccg gtt ccg gcg gtg ccg cca   336
Val Pro Pro Gly Ser Gly Ala Pro Arg Pro Val Pro Ala Val Pro Pro
            100                 105                 110

atg ccg cca gcg ccg aag agg atg ccg gcg ttg ccg ccc gcc ccg ccg   384
Met Pro Pro Ala Pro Lys Arg Met Pro Ala Leu Pro Pro Ala Pro Pro
        115                 120                 125

gcc ccg ccc tca ccg ccc acg agt tgg tta gcg gtg cca gtt ccg ccg   432
Ala Pro Pro Ser Pro Pro Thr Ser Trp Leu Ala Val Pro Val Pro Pro
    130                 135                 140

gtg ccg ccg gtc ccg ccg ttg ccg gtg aag atg ccg ccg tcg cct ccg   480
Val Pro Pro Val Pro Pro Leu Pro Val Lys Met Pro Pro Ser Pro Pro
145                 150                 155                 160

gtg ccg ccg ttc cct ccg gcc gag ccg gag act ccg aac ccg ccg gcg   528
Val Pro Pro Phe Pro Pro Ala Glu Pro Glu Thr Pro Asn Pro Pro Ala
                165                 170                 175

ccg ccg gca ccg cca ttg gag aac agc ccg ccg ccc ccg ccg gtg ccg   576
Pro Pro Ala Pro Pro Leu Glu Asn Ser Pro Pro Pro Pro Pro Val Pro
            180                 185                 190

ccg gtg cca ccg gtg ccc ccg ttg acg ctc aac ccg ccg gtg ccg ccg   624
Pro Val Pro Pro Val Pro Pro Leu Thr Leu Asn Pro Pro Val Pro Pro
        195                 200                 205

gca ccg ccg gcg gcc aac acc tcg aac agc ccg ctg cga ccg ccg gcc   672
Ala Pro Pro Ala Ala Asn Thr Ser Asn Ser Pro Leu Arg Pro Pro Ala
    210                 215                 220

ccg ccg gcg cca ccg ttg aag cct ggc ccg ccg gcc ccg ccg atg cca   720
Pro Pro Ala Pro Pro Leu Lys Pro Gly Pro Pro Ala Pro Pro Met Pro
225                 230                 235                 240

ccg gct ccg aac agc ccg gcc gcc ccg ccg tcg ccg ccg agc ccg cct   768
Pro Ala Pro Asn Ser Pro Ala Ala Pro Pro Ser Pro Pro Ser Pro Pro
                245                 250                 255

gtg ccg gtg ttc ccg act ccg ccg ggc ccc ccg gcg ccg ccg gag ccg   816
Val Pro Val Phe Pro Thr Pro Pro Gly Pro Pro Ala Pro Pro Glu Pro
            260                 265                 270

aac agc agc ccg ccg gcc ccg ccg gcc ccg cca gcc gcg ccg ttg ccc   864
Asn Ser Ser Pro Pro Ala Pro Pro Ala Pro Pro Ala Ala Pro Leu Pro
```

```
        275                 280                 285

ggg ccg tca ccc ccg gcc cca ccc gcc ccg ccg ttg ccg aat agc ccc   912
Gly Pro Ser Pro Pro Ala Pro Pro Ala Pro Pro Leu Pro Asn Ser Pro
    290                 295                 300

gcg gct cca cct ggg ccg ccg gcc tgg ccg ggc gcc ccg gac ccg ccg   960
Ala Ala Pro Pro Gly Pro Pro Ala Trp Pro Gly Ala Pro Asp Pro Pro
305                 310                 315                 320

gcc ccg ccg ttg ccg tac agc agc ccg ccg gcc ccg ccg gct tgc ccg   1008
Ala Pro Pro Leu Pro Tyr Ser Ser Pro Pro Ala Pro Pro Ala Cys Pro
                325                 330                 335

gtc ccc ggt gcg ccg ttg gcg ccg ttg ccg atc agc gga cgc ccc agc   1056
Val Pro Gly Ala Pro Leu Ala Pro Leu Pro Ile Ser Gly Arg Pro Ser
            340                 345                 350

aac agc tgg gtg ggc gtg ttc aca atg ttg agc agg ccc tcc aac ggc   1104
Asn Ser Trp Val Gly Val Phe Thr Met Leu Ser Arg Pro Ser Asn Gly
        355                 360                 365

gcc gcg gcg gcg gcc tca gcg ctc gcg tac gcg cca gcg ccc gca gta   1152
Ala Ala Ala Ala Ala Ser Ala Leu Ala Tyr Ala Pro Ala Pro Ala Val
    370                 375                 380

aag gtt tga                                                      1161
Lys Val
385
```

<210> 10
<211> 386
<212> PRT
<213> Mycobacterium tuberculosis

<400> 10

```
Asn Ser Met Pro Val Pro Pro Ala Pro Pro Ala Pro Pro Ser Pro Ile
  1               5                  10                  15
Asn Pro Pro Val Pro Pro Val Pro Pro Leu Pro Ala Ala Pro Arg Thr
             20                  25                  30
Leu Ser Pro Pro Val Pro Pro Ala Pro Pro Ser Pro Ile Ser Leu Ala
         35                  40                  45
Ala Pro Pro Leu Pro Pro Asp Pro Pro Met Pro Pro Ala Ile Trp Ser
     50                  55                  60
Ala Leu Glu Ala Pro Asn Pro Pro Val Pro Pro Ala Pro Pro Gly Pro
 65                  70                  75                  80
Asn Ser Ala Pro Ala Pro Pro Met Pro Pro Thr Pro Pro Leu Pro Pro
```

```
                85                  90                  95
Val Pro Pro Gly Ser Gly Ala Pro Arg Pro Val Pro Ala Val Pro Pro
            100                 105                 110
Met Pro Pro Ala Pro Lys Arg Met Pro Ala Leu Pro Pro Ala Pro Pro
        115                 120                 125
Ala Pro Pro Ser Pro Pro Thr Ser Trp Leu Ala Val Pro Val Pro Pro
    130                 135                 140
Val Pro Pro Val Pro Pro Leu Pro Val Lys Met Pro Pro Ser Pro Pro
145                 150                 155                 160
Val Pro Pro Phe Pro Pro Ala Glu Pro Glu Thr Pro Asn Pro Pro Ala
                165                 170                 175
Pro Pro Ala Pro Pro Leu Glu Asn Ser Pro Pro Pro Pro Pro Val Pro
            180                 185                 190
Pro Val Pro Pro Val Pro Pro Leu Thr Leu Asn Pro Pro Val Pro Pro
        195                 200                 205
Ala Pro Pro Ala Ala Asn Thr Ser Asn Ser Pro Leu Arg Pro Pro Ala
    210                 215                 220
Pro Pro Ala Pro Pro Leu Lys Pro Gly Pro Pro Ala Pro Pro Met Pro
225                 230                 235                 240
Pro Ala Pro Asn Ser Pro Ala Ala Pro Pro Ser Pro Pro Ser Pro Pro
                245                 250                 255
Val Pro Val Phe Pro Thr Pro Pro Gly Pro Pro Ala Pro Pro Glu Pro
            260                 265                 270
Asn Ser Ser Pro Pro Ala Pro Pro Ala Pro Pro Ala Ala Pro Leu Pro
        275                 280                 285
Gly Pro Ser Pro Pro Ala Pro Pro Ala Pro Pro Leu Pro Asn Ser Pro
    290                 295                 300
Ala Ala Pro Pro Gly Pro Pro Ala Trp Pro Gly Ala Pro Asp Pro Pro
305                 310                 315                 320
Ala Pro Pro Leu Pro Tyr Ser Ser Pro Pro Ala Pro Pro Ala Cys Pro
                325                 330                 335
Val Pro Gly Ala Pro Leu Ala Pro Leu Pro Ile Ser Gly Arg Pro Ser
            340                 345                 350
Asn Ser Trp Val Gly Val Phe Thr Met Leu Ser Arg Pro Ser Asn Gly
        355                 360                 365
Ala Ala Ala Ala Ala Ser Ala Leu Ala Tyr Ala Pro Ala Pro Ala Val
    370                 375                 380
Lys Val
385
```

<210> 11
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 11

Ser Lys Leu Ile Glu Tyr Asp Glu Leu Ala Leu Glu Ala Met Glu
1 5 10 15

<210> 12
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 12
Ser Lys Leu Ile Glu Tyr Asp Glu Thr Ala Arg His Ala Met Glu
1 5 10 15

<210> 13
<211> 12
<212> PRT
<213> Mycobacterium tuberculosis

<400> 13
Ala Lys Thr Ile Ala Tyr Asp Glu Glu Ala Arg Val
1 5 10

<210> 14
<211> 10
<212> PRT
<213> Mycobacterium tuberculosis

<400> 14
Ala Lys Thr Ile Ala Tyr Asp Glu Glu Ala
1 5 10

<210> 15
<211> 14
<212> PRT
<213> Mycobacterium tuberculosis

<400> 15
Ala Glu Val Asp Ala Tyr Lys Phe Asp Pro Asp Ala Val Asp
1 5 10

<210> 16
<211> 12
<212> PRT
<213> Mycobacterium tuberculosis

<400> 16
Ala Glu Phe Asp Ala Tyr Arg Arg Asp Pro Met Ala
1 5 10

<210> 17
<211> 13
<212> PRT
<213> Mycobacterium tuberculosis

<400> 17
Ala Glu Tyr Thr Leu Pro Asp Leu Asp Trp Asp Tyr Gly
1 5 10

<210> 18
<211> 13
<212> PRT
<213> Mycobacterium tuberculosis

<400> 18
Ala Glu Tyr Thr Leu Pro Asp Leu Asp Trp Asp Tyr Gly
1 5 10

<210> 19
<211> 11
<212> PRT
<213> Mycobacterium tuberculosis

<400> 19
Met Glu Ile Asp Ile Leu Ala Val Ala Ala Pro
1 5 10

<210> 20
<211> 11
<212> PRT
<213> Mycobacterium tuberculosis

<400> 20
Ile Glu Val Asp Leu Leu Asp Leu Asp Ala Pro
1 5 10

<210> 21
<211> 13

<212> PRT
<213> Mycobacterium tuberculosis

<400> 21
Ala Thr Thr Leu Pro Val Gln Arg His Asp Ala Arg Leu
1 5 10

<210> 22
<211> 12
<212> PRT
<213> Mycobacterium tuberculosis

<400> 22
Ala Thr Leu Pro Val Gln Arg His Pro Arg Ser Leu
1 5 10